

2008 Trac Fruit Software for spray record traceability available online.

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Fruit Processors, Storages and Wholesalers

Motts Inc., Cadbury Schwepp's	Ultimate Juice (Zeigler)	Carriage House Co., Inc.
Yonder Farms Fruit Distributors	Beech-Nut Nutrition Corp.	Growers Co-op. Grape Juice
Birds Eye Foods	Knouse Foods	Co.
Bucolo Cold Storage Inc.	Constellation Wines	Meier's Wine Cellars, Inc.
Champlain Valley Apple Storage	Cliffstar Corporation	Mogen David Wine Co.
Pavero Cold Storage	Westfield Maid	Red Tomato, EcoApple

Funding sources (other than NYS IPM Program):

Pesticide Management Education Program (PMEP), Cornell University

Project location(s): This project reached locations across New York, primarily tree fruit and grape growing regions. Trac Software was downloaded for use in 31 other States and in Canada.

Abstract:

Trac Software, an Excel-based record-keeping and reporting software program, enables easy maintenance and reporting of accurate crop protection records that are, 1) vital to a farmer's market edge, when global markets demand pesticide traceability, and 2) fundamental to IPM practices. 2008 Trac Fruit Software were placed online for free downloading. This year, 645 Trac Fruit Software files were downloaded by 424 people. 2008 upgrades included revisions to the pesticide data, the Trac Software Manual, and creation of Private Applicator Record and Restricted Pesticide Purchases report forms. Trac Turf Software programs, TracGolf, TracGrounds, TracLawn, and TracSod were completed (report by Grant et al). 98% of farmers using Trac will continue using it for their record-keeping and reporting needs.

Background and justification:

Issue - Farmers face increasing need to produce crop protection and production records on demand. Pesticide records are required by the Environmental Protection Agency Worker Protection Standard (EPA-WPS), the New York State Department of Environmental Conservation (DEC), processors, marketers, etc and each has a different reporting form, required either by law or to market the crop. This necessitates that farmers fill out several different forms when marketing their crop, making record-keeping an unnecessarily burdensome task. In an expanding and increasingly competitive global market, farmers with the ability to produce

detailed crop production records, including pesticide spray records, will have a competitive edge. As more consumers actively seek products with eco-labels, those grown without pesticides, those produced in an environmentally sound manner, or those produced under sustainable practices, the onus will be on the farmer, processor, and marketer to show auditors that such practices were used. Furthermore, accurate records are critically important to the farmer, particularly when pest or disease control failures or severe outbreaks occur. Computerized records allow farmers to easily review past IPM practices in light of pest control failures or severe pest pressure.

Response - Apple farmers requested that record-keeping software be developed to generate at once the several pesticide spray record forms required by processors, buyers, and brokers. Grape juice processors requested similar software for vineyard managers. Funds from several sources supported software development in Microsoft Excel. In 2003 TracApple, in 2004 TracGrape, and in 2005 TracPear, TracCherry, TracStoneFruit, and TracBerry were released. The software is licensed and copyrighted by Cornell University through the Cornell Center for Technology Enterprise & Commercialization (CCTEC). Pesticide registration information is updated each year in a ChemTable. Farmers using Trac software enter their data once and can send it to various report forms for processors, buyers, and government agencies. The user simply fills in the blanks on data entry worksheets. Trac software has drop-down lists for pesticides and pests, saving time and preventing errors. The software generates drop-down lists specific to the user's farm business. When a pesticide trade name is selected Trac automatically fills in the EPA registration number, restricted entry interval, pre-harvest interval, and calculates the earliest harvest date and the cost of the application. The software fills out an EPA-WPS Central Posting Form to inform farm workers about safe re-entry.

Objectives:

1. Upgrade, license and release Trac Software for fruit.
2. Update supporting information for Trac Software.
3. Conduct Trac workshops and presentations.
4. Facilitate development of Trac software for other crops.

Procedures:

1. UPGRADE TRAC SOFTWARE FOR FRUIT, LICENSE AND RELEASE THE 2008 VERSIONS.

Grower input into improvement of Trac Software serves as the basis for many yearly revisions to the software. Trac Software 2008 updates for fruit crops included revisions to the pesticide information, the Trac Software Manual, improved Chem Table and SprayData linkage, a "More Rows" button for the BloomHarvestData sheet, and creation of Private Applicator Record and Restricted Pesticide Purchases report forms.

Trac software was disclosed for copyright and licensing via CCTEC. During this process it was decided to license the software programs for free download from the internet. Disclaimers for the use of pesticides and the software was cleared through PMEP. Online availability was announced through Extension newsletters, trade magazines, Extension-sponsored grower meetings, the Fruit & Vegetable Expo, and via email to all 2007 Trac Software CD recipients.

In 2008, CCTEC licensed Trac Software to Thomas Green, The IPM Institute, to enable linkage of the grower's SprayData with a pesticide selection software tool they are developing with a grant from the Natural Resources Conservation Service.

The website Trac Fruit Downloads <http://nysipm.cornell.edu/trac/downloads/default.asp> was developed to house the software, collect user information, and distribute the Trac Software Manual. A total of 424 people downloaded 645 copies of Trac Fruit software in 2008 (Table 1). Eight people in Canada downloaded Trac Fruit Software, 61 in New England, mainly MA (28),

32 in PA, 16 in WI, 14 in MI, 13 in IA, 11 in AL, nine in WA, seven in OH, and four in FL, MN, MO, and NE, three in IN and OR, two in CA, KY, MD, NC, TX, VA, and WY, and one in IL, KS, LA, ND, and SC. The majority of people, 204, are in New York State.

Table 1. Number of Trac Software files downloaded in 2008, beginning March 31.

Software	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Total
TracGrape	NA*	159	55	8	222
TracApple	NA	159	19	17	195
TracPear	NA	32	3	4	39
TracStoneFruit	NA	47	13	8	68
TracCherry	NA	36	4	7	47
TracBerry	NA	59	7	8	74
Totals	--	492	101	52	645

*NA – not available

Because Trac Software contains Visual Basic macro programming code, technical support on enabling macros in Excel was improved in the Software Manual. The number of tech support calls (~20) increased in 2008 but still represented only 3% of users. Many tech support calls were about unzipping the compressed files. Microsoft Excel v2002 caused a fatal error in TracStoneFruit, TracCherry, and TracGrape for 11 people. This bug was diagnosed late in 2008 and related to a picture in the Excel file. This bug has been eliminated for the 2009 upgrades.

In 2008, PMEP IT staff assisted with development of improved ChemTable and SprayData linkage, a “More Rows” button for the BloomHarvestData sheet, and creation of Private Applicator Record and Restricted Pesticide Purchases report forms.

The most important part of developing Trac Software programs is in maintaining and updating the pesticide information for each crop. This effort is supported by the Cornell Pest Management Guidelines series and by faculty and staff involved in contributing to these publications (Agnello 2008, Pritts 2008, Weigle and Muza 2008.)

2. UPDATE SUPPORTING INFORMATION FOR TRAC SOFTWARE.

The Trac Software Manual was revised in 2008, must be downloaded with the Trac Software, and was distributed at training sessions. The Trac Software website, hosted by the NYS IPM Program, <http://nysipm.cornell.edu/trac/default.asp>, was updated. Trac brochures were distributed at Extension-sponsored grower meetings and the Empire State Fruit & Vegetable Expo. The brochure was revised to include information about Trac for turfgrass.

3. CONDUCT TRAC WORKSHOPS AND PRESENTATIONS.

In 2008, presentations on Trac Software (Table 1) reached an estimated 180 people.

Table 1. TracApple presentations, exhibits, and workshops conducted in 2004.

Date	Title	Location	Audience	#
2/29	IPM TracGrape	Hudson Valley Fruit School, Kingston, NY	Grape growers, educators, faculty	70
3/5	TracApple record-keeping	EcoApple meeting, Belchertown, MA	Apple growers, EcoApple advisors	30
3/15	Useful tools for TracGrape users	Finger Lakes Grape Growers Conference, Waterloo, NY	Grape growers	80

4. FACILITATE DEVELOPMENT OF TRAC SOFTWARE FOR OTHER CROPS.

Jennifer Grant, NYS IPM Program, lead development of Trac for turfgrass managers (Grant et al 2008). Beta versions were field tested, revised versions reviewed and final copies of TracSod, TracGolf, TracLawns, and TracGrounds created, licensed and released.

Results and discussion:

Impact – Trac has effectively streamlined the burdensome task of record-keeping and reporting for fruit farmers. In 2008, 645 Trac Software files were downloaded by 424 farmers in NY, 31 other States and in Canada. Trac Software has been successfully developed and deployed for all fruit crops commonly grown in NY. The six versions licensed and released cover 15 fruit crops, including: apple, pear, grape, tart cherry, sweet cherry, peach, nectarine, apricot, plum, strawberry, blueberry, raspberry, blackberry, currant, and gooseberry. Growers using the software state that it is easy to record and manipulate their crop production and crop protection data in Trac. Trac software has been made available for free; compared to other farm-related software that is purchased and is more complicated to learn, Trac software provides a simple answer to bringing more farmers into the computer age and digitizing New York's agricultural industry. Growers that are able to easily access computer records of pesticide and fertilizer applications and compare practices from year to year, tracking costs and harvests, will better manage their farm businesses, make more informed IPM decisions, and foster their farm's sustainability. Those using Trac Software say it has helped their bottom line (61%), improved their access to new markets (28%), improved their IPM record-keeping and reporting ability (79%), made record-keeping easier (70%), and 98% will continue using it (Carroll 2008).

Grower praise: "Thank you for sending me notification that Trac Software was online. I wanted to let you know how good it is...I was inspected by our...Department of Ag late last summer. I passed with flying colors. Your program has...beat by far, because it is so easy to use by people who need to keep the record or workers who need to know what is going on. Thank you for making my life easier."

Publications:

- Carroll, J.E. 2008. Trac Software enhances spray record-keeping and traceability. NYS IPM Program Project Reports 2007-2008, NYS IPM Pub 506: 81-84.
- Carroll, J.E. 2008. Useful tools for TracGrape users. Proc. 58th Ann. Finger Lakes Grape Growers Conf., Waterloo, NY.
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